Los Alamos
NATIONAL LABORATORY
E-WM (/Waste Management) Program
Los Alamos, New Mexico 87545

Off-Site Source Recovery Project (OSR)

May 1999

OSR Project contact information

Joel Grimm
DOE-Albuquerque Operations
Waste Management Division
(505) 845-5463
e-mail: jgrimm@doeal.gov

Lee Leonard
Los Alamos National Laboratory
E-WM Program Office
Off-Site Source Recovery Project
Mail Stop J552
Los Alamos, NM 87545
(505) 665-8292, fax (505) 665-7913
e-mail: lleonard@lanl.gov

Introduction

Consistent with the mission of Los Alamos National Laboratory (LANL) to reduce the global nuclear danger, the Off-Site Source Recovery (OSR) Project recovers and manages unwanted radioactive sealed sources for which the US Department of Energy (DOE) is ultimately responsible under Public Law 99-240 (The Low-Level Radioactive Waste Policy Amendments Act of 1985). The objective of this project is to reduce to zero the backlog of unwanted radioactive sealed sources in the US for which no disposal options now exist. Achieving this goal will reduce the potential risk to public health, safety, and the environment posed by excess radioactive material.

Background

The OSR Project at LANL is managed from the E-WM (Waste Management) Program Office. The project consolidated three activities: the Radioactive Source Recovery Program, the Off-Site Waste Program, and the Pu-239/Be Neutron Source Project. The project recovers and manages unwanted radioactive sealed sources and other radioactive material from the public and private sectors that

- present a risk to public health and safety,
- are no longer controlled by a Nuclear Regulatory Commission (NRC) or Agreement State licensee,
- are a DOE responsibility under Public Law 99-240, or
- are DOE-owned.

The project will allow the DOE to more aggressively recover and manage a wider variety of the estimated 18,000 sealed sources and sealed source devices that will become excess over the next decade.

Operational Objectives of the OSR Project

The project has these objectives:

- decrease the time required to respond to emergency requests for source recoveries from NRC and state agencies;
- recover and manage more sources annually than was possible in the past;
- become more proactive in addressing the long-term storage and final disposition issues associated with unwanted, high-energy radioactive sources;
- broaden the scope of source types currently accepted for management;
- decrease the programmatic life-cycle cost to the DOE to recover and manage targeted sources; and
- implement a program to recover reasonable costs from the owners of excess and unwanted sources who can pay.

May 1999
LALP 99-109

Recent Accomplishments

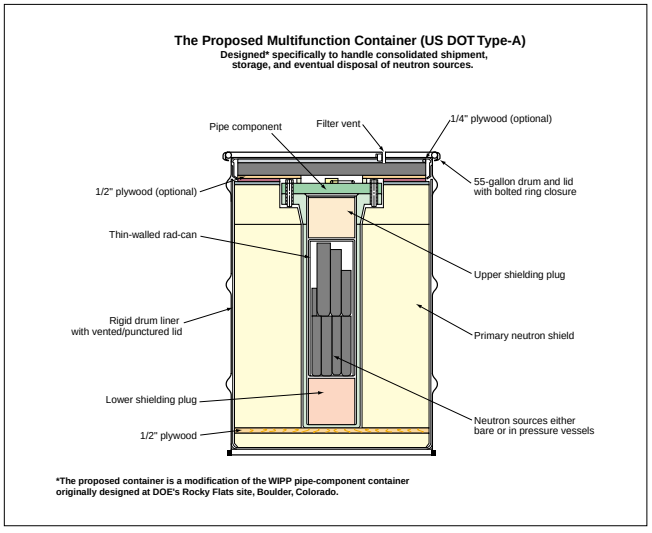
At the request of the NRC and in cooperation with Agreement States, the project has recovered 53 unwanted Am-241 and Pu-238 sources since September 1998 to demonstrate a pilot program of source recovery. These sources are currently in interim storage. LANL E-WM worked with private industry to achieve safe and cost-effective recovery of unwanted sources. It is also working with private industry and DOE facilities to create a variety of safe and cost-effective, long-term storage options for recovered sealed-source material. LANL E-WM continues to support DOE-Albuquerque Waste Management Division in planning for both the recycle and final disposal of radioactive materials recovered by the project.

Comprehensive Sealed-Source Database

LANL is developing a database that will identify and track all the excess radioactive sources for which disposal options do not now exist. This database will ultimately be used as a life-cycle management tool that will track sealed sources from the time they are first identified as excess material, through potential reuse and recycle, and ultimately through final disposal. Source owners and agencies with unwanted sealed sources that exceed the limits for current disposal options are encouraged to register their sources through the OSR Project at LANL.

Multifunction Container

A container is being developed for transportation and storage of radioactive sealed sources that will also meet the waste acceptance criteria and transportation codes for the Waste Isolation Pilot Plant (WIPP).



The container will

- provide a packaging standard for transportation, storage, and disposal;
- allow consolidation to minimize volumes for transport, storage, and disposal;
- address the container-shielding needs of a wide variety of sealed sources and devices; and
- reduce the operational radiation dose to workers at every stage of operation.

Although few unwanted sealed sources in the public sector are now eligible for disposal at WIPP because of their nondefense-related origin, following the WIPP model will provide

- a WIPP equivalent characterization and quality-assurance certification process;
- a rigorously packaged material that can be recovered and reused if needed; and
- a well-characterized waste form that will be ready for immediate shipment to a disposal site when disposal becomes available.

Future Plans

During the rest of federal fiscal year 1999 (FY99), the second phase of the pilot project will be conducted. An estimated 80 additional Am-241 and Pu-238/239 sources are targeted for recovery. In cooperation with the NRC and state radioactive materials regulatory authorities, the OSR Project will prioritize acceptance of sources based on potential risk.

In FY00, the OSR Project will become fully operational. The ultimate goal of the project is to eliminate all significant risk to public health and safety posed by unwanted radioactive sealed sources, for which DOE is responsible. The objective of the project is to bring the DOE into full compliance with its sealed source responsibilities under Public Law 99-240 by 2006.